LONG-TERM GROUNDWATER MONITORING REPORT
ELEVENTH ROUND (March 2009)

BLACKWELL FOREST PRESERVE LANDFILL SITE
DUPAGE COUNTY, ILLINOIS

MWH File No.: 4050581

Prepared For:

Forest Preserve District
DuPage County, Illinois

Prepared By:

MWH Americas, Inc.
175 West Jackson Boulevard, Suite 1900
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June 2009

MWH

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ACRONYMS AND ABBREVIATIONS

District	Forest Preserve District of DuPage County
IEPA	Illinois Environmental Protection Agency
MCLs	Maximum Contaminant Levels
mg/L	milligrams per liter
MWH	MWH Americas, Inc.
PCE	Tetrachloroethene
ORP	Oxidation-Reduction Potential
QAPP	Quality Assurance Project Plan
QC	Quality Control
RI/FS	Remedial Investigation/Feasibility Study
Site	Blackwell Landfill
TCE	Trichloroethene
TCL	Target Compound List
TDS	Total Dissolved Solids
µg/L	Micrograms per liter
U.S. EPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

This report documents the results of the eleventh round of long-term groundwater monitoring that have been conducted at the Blackwell Landfill NPL Site (Site) since March 2001. A total of 22 groundwater monitoring events have been conducted at the Site. The Site is located within the Blackwell Forest Preserve in Warrenville, DuPage County, Illinois (Figure 1). General site features are shown in Figure 2.

2.0 SCOPE OF MONITORING PROGRAM

Groundwater monitoring at the Blackwell Site has consisted of a total of 22 sampling events over the past 18 years. Two rounds of sampling were conducted during the Remedial Investigation in 1991 and 1992, and another round was conducted during the Feasibility Study in 1995. Since 1997, a total of 19 rounds of groundwater monitoring have taken place at the Blackwell Site. Eight sampling events were conducted under the Quarterly Groundwater Monitoring Program between 1997 and 2000. In addition, eleven rounds of groundwater monitoring have been conducted under the Long-Term Groundwater Monitoring Program from March 2001 through March 2009.

The original Monitoring Plan (Montgomery Watson, 2001) consisted of five rounds of monitoring between March 2001 and March 2004. Following the fifth sampling event, the District evaluated the groundwater results and recommended extending the groundwater monitoring program for three additional rounds. As outlined in the *Revised Long-Term Groundwater Monitoring Program Summary Report* (MWH, February 2005), three additional rounds of groundwater monitoring were conducted between March 2005 and September 2006. In the *Long-Term Groundwater Monitoring Report, Eighth Round* (MWH, December 2006), MWH and the District recommended three additional rounds of groundwater sampling, each one to be conducted during the spring, beginning in 2007.

This eleventh round of groundwater sampling conducted during March 2009, is the third of the three proposed spring sampling events. The table below is a summary of the 22 sampling events conducted at the Site to date. The District has voluntarily proposed to extend the groundwater monitoring program for three additional rounds to be conducted during 2010, 2011, and 2012 in the spring of each year. Further details are discussed in Section 5.0 of this report.

Round	Date	Event Number
Remedial Investigation		
First Round	Sep 1991	-
Second Round	Jan 1992	-
Feasibility Study		
First Round	Jun 1995	-
Quarterly Groundwater Monitoring Program		
First Round	Nov 1997	1
Second Round	Jul 1998	2
Third Round	Oct 1998	3
Fourth Round	Feb 1999	4
Fifth Round	May 1999	5
Sixth Round	Aug 1999	6
Seventh Round	Nov 1999	7
Eighth Round	Feb 2000	8

Round	Date	Event Number
Long Term Groundwater Monitoring Program		
First Round	Mar 2001	9
Second Round	Dec 2001	10
Third Round	Sep 2002	11
Fourth Round	Jun 2003	12
Fifth Round	Mar 2004	13
Sixth Round	Mar 2005	14
Seventh Round	Dec 2005	15
Eighth Round	Sep 2006	16
Ninth Round	Mar 2007	17
Tenth Round	Mar 2008	18
Eleventh Round	Mar 2009	19

The purpose of the monitoring program is to:

- Ensure that contaminant levels in groundwater do not increase to a level that could jeopardize either human health or the environment;
- Evaluate the effectiveness of the treatment/containment components on the landfill;
- Detect changes in the chemical composition of groundwater at and adjacent to the Site; and
- Demonstrate that natural attenuation continues to be an effective remedial strategy for impacted groundwater.

Twenty-six monitoring wells are included in the monitoring program. Each monitoring event includes collecting groundwater level measurements, surveying surface water elevations, groundwater sampling, and analyses. The wells can be grouped as follows:

- Detection monitoring wells, located between the landfill and the downgradient Site boundary;
- Compliance monitoring wells, located along the downgradient Site boundary; and
- Other monitoring wells/piezometers for water level measurement only.

The rationale for including these wells in the groundwater monitoring program is discussed in the January 2001 *Revised Long-Term Groundwater Monitoring Program Report.*

The monitoring wells are further grouped into those screened in the upper, glacial outwash aquifer (Figure 3) and those screened in the lower, limestone bedrock aquifer (Figure 4). The 26 wells are assigned the following groupings:

Detection Monitoring Wells

Glacial Outwash Aquifer Wells		Bedrock Wells
G117	G127	G128D
G118S	G129	G140D
G126	G130	

Compliance Monitoring Wells

Glacial Outwash Aquifer Wells		Bedrock Wells	
G122	G147*	G133D	G138

** Monitoring well G147 was installed in March 2001 and sampled for two rounds at the request of the U.S. EPA. G147 will not be sampled again because VOCs were not detected in the collected groundwater samples.*

Water Level Wells

Glacial Outwash Aquifer Wells		Bedrock Wells
P2	G133S	G132D
G107S	G142	G134
G114	G143	G135
G121	G144	G137
G123		G139

Groundwater samples collected from the detection and compliance monitoring wells are analyzed for volatile organic compounds (VOCs) on the Target Compound List (TCL), phenol, and water quality parameters (i.e., chloride, sulfate and total dissolved solids [TDS]).

3.0 SUMMARY OF FIELD ACTIVITIES

3.1 GROUNDWATER SAMPLING

Groundwater samples were collected from the detection and compliance monitoring wells from March 10 through March 12, 2009. The samples were collected in accordance with procedures described in the United States Environmental Protection Agency (U.S. EPA) approved *Revised Pre-Design Investigation Activities Report, Appendix F* (Montgomery Watson, July 1997) and all subsequent and approved addenda. The samples were analyzed and validated in accordance with the *Quality Assurance Project Plan* (QAPP), [Volume IV of the *Pre-Design Investigation Activities Report* (Montgomery Watson, August 1996)]. The sampling sequence and procedures are summarized below:

- Static water levels were measured at each of the detection, compliance, and water level wells (Table 1) on March 10, 2009.

- Water elevations of nearby surface water bodies (i.e., Silver Lake, Pine Lake, Sand Pond, three locations along Spring Brook and one location on the west branch of the DuPage River) were measured by a licensed, professional surveyor on March 10, 2009. The measurements and calculated water levels are included in Table 1.

- Groundwater samples were collected at 11 monitoring wells. All monitoring wells were purged with a decontaminated, submersible pump using low-flow methods. Dedicated tubing was used in each well. Wells were purged until field parameters (i.e., pH, specific conductivity, turbidity, dissolved oxygen, temperature, and oxidation-reduction potential [ORP]) stabilized. The stabilized pH value at monitoring well G133D was recorded at 11.37. High pH values are historically recorded at this well during initial purging, but in the past, they have stabilized at lower values more consistent with those of groundwater. However, during the March 2009 event, pH values did not decrease upon stabilization at G133D. The historically high pH values are likely due to an interaction of bentonite grout with the groundwater at this location. Results of the stabilized field parameters are listed in Table 2.

- All monitoring well samples were collected from the pump discharge port following stabilization.

- Quality control (QC) samples (e.g., duplicates, field blanks, and matrix spike/matrix spike duplicates) were collected at frequencies specified in the QAPP.

- Following collection, the samples were placed in coolers packed with ice. The samples were delivered under chain-of-custody to First Environmental Laboratories, Inc. in Naperville, Illinois for analysis.

3.2 ANALYTICAL RESULTS

The groundwater samples were analyzed for TCL VOCs, phenol, chloride, sulfate and TDS. All samples were analyzed in accordance with the analytical methods and required practical quantitation limits outlined in the QAPP and in the QAPP addenda. The laboratory-supplied data package was reviewed and validated by MWH Americas, Inc. (MWH) in accordance with the QAPP and U.S. EPA guidance. The validation report has been retained on file at MWH and is available upon request.

The validated analytical results from the March 2009 sampling event are summarized in Table 3. The U.S. EPA's Maximum Contaminant Levels (MCLs) and Illinois Environmental Protection Agency (IEPA) Class I Groundwater Standards (i.e., "regulatory standards") are also listed in Table 3, and exceedances of these standards are in bold print. A summary of detections, groundwater standards, and exceedances of standards is provided in Table 4.

The analytical data in Table 3 indicate that:

- No VOCs were detected during the eleventh round of long-term groundwater monitoring. The March 2009 event was the first monitoring event over the past eleven rounds in which no VOCs were detected. During the tenth round of groundwater sampling in March 2008, cis-1,2-dichloroethene was detected in samples collected from detection monitoring wells G117 and G127 located in the upper outwash aquifer, and vinyl chloride was detected in samples collected from detection monitoring well G127.

- Phenol was not detected in any of the samples collected from the monitoring wells sampled during the March 2009 sampling event (eleventh round). During the March 2008 sampling event (tenth round) phenol was detected in a duplicate sample from G127. Because of its low concentration and previous history of non-detections, it was believed to be a laboratory artifact and not representative of actual groundwater conditions. The current results confirm this statement.

- Total dissolved solids were detected in groundwater samples from 10 of the 11 detection and compliance wells at concentrations above the secondary MCL. The maximum detected concentration was 830 milligrams per liter (mg/L) in the sample from outwash detection well G118S. TDS exceedances were distributed among all four classes of monitoring wells (i.e., shallow and deep detection wells and shallow and deep compliance wells).

- Consistent with previous sampling events, sulfate was detected in samples from all 11 wells during the eleventh round of groundwater monitoring. Chloride was also detected in samples from all 11 wells. All detected concentrations were below the U.S. EPA MCL of 250 mg/L for chloride and 500 mg/L for sulfate. Chloride concentrations ranged from 6 mg/L to 142 mg/L, and sulfate concentrations ranged from 80 mg/L to 205 mg/L.

3.3 COMPARISON TO HISTORIC ANALYTICAL RESULTS

MWH reviewed the historic analytical results obtained from detection and compliance monitoring wells during the Remedial Investigation and Feasibility Study (RI/FS) and previous rounds of quarterly groundwater monitoring to assess overall trends in the data and specific changes shown by the eleventh round of long-term monitoring. The reports that summarize the previous monitoring events are referenced in Section 6.0 of this report. The historic data was collected on the following dates:

- First and second round of the RI, 1991 through 1992;
- One round collected during the FS, 1995;
- Eight rounds collected during the Quarterly Groundwater Monitoring Program, 1997 through 2000;
- Eleven rounds have been collected since March 2001 as part of this Long-Term Groundwater Monitoring Program.

Review of historic data and Table 4 indicates the continuation of decreasing concentration and decreasing total number of detections of the contaminants of concern with time.

- **The number of VOCs detected in groundwater samples is decreasing with time.** For example, during the first round of the RI in September 1991, a total of seven distinct VOCs were detected in samples from nine monitoring wells. Recently, in March 2008 during the tenth round of sampling, only two individual VOCs were detected, and during the current March 2009 sampling event, no VOCs were detected in groundwater samples. Additionally, benzene has not been detected in groundwater during the eleven rounds of groundwater monitoring conducted since 2001. The chlorinated organic suite of compounds [tetrachloroethene (PCE), trichloroethene (TCE), cis- and trans-1,2-dichloroethene, and vinyl chloride] is now detected less frequently and at lower concentrations. Trichloroethene and trans-1,2-dichloroethene have not been detected at any of the monitoring wells in the samples collected since 2001. The parent compound PCE has been detected only once, during round six, at a low concentration (5.6 micrograms per liter [µg/L]).

- **The concentrations of detected VOCs are also decreasing with time.** The maximum detected concentration of cis-1,2-dichloroethene (total) was 120 µg/L in January during the second round of the RI in 1992. During the tenth round of sampling (March 2008), the maximum detected concentration of cis-1,2-dichloroethene was 11.1 µg/L, detected at G117. Currently, during the eleventh round of sampling in March 2009, concentrations of cis-1,2-dichloroethene were below the laboratory detection limits in all of the samples collected from the monitoring wells. The regulatory limit for cis-1,2-dichloroethene is 70 µg/L.

- **The detected concentrations of cis-1,2-dichloroethene and vinyl chloride in the outwash detection wells are decreasing with time**. For presentation purposes, a

trendline analysis for the concentrations of cis-1,2-dichloroethene and vinyl chloride in monitoring wells G118S and G127 is shown in Appendix B. The detected (and non-detected) concentrations of cis-1,2-dichloroethene continue to represent a downward trend in concentration versus time as described in the Revised Long-Term Groundwater Monitoring Program.

Groundwater samples from monitoring well G127 have occasionally included detections of vinyl chloride. Vinyl chloride has been detected in the samples from G127 during four of the eleven monitoring events conducted since 2001. Vinyl chloride was detected in samples from G127 during the June 2003, March 2005, March 2007, and March 2008 sampling events. Vinyl chloride was not detected in samples from G127 in March 2009.

Vinyl chloride was not detected in samples collected from G118S during the March 2008 or March 2009 sampling events. Vinyl chloride was detected in samples from this well during the first round of the RI (18.0 µg/L) in September 1991 and in March 2007 (3.1 µg/L). The trendline for vinyl chloride concentrations in samples from G118S and G127 continues to represent a decreasing trend with time, as shown in Drawings 1 and 2 of Appendix B. The occasional detections of vinyl chloride in samples from G118S and G127 are likely due to the biodegradation of cis-1,2-dichloroethene (during reductive dechlorination, cis-1,2-dichloroethene degrades to vinyl chloride).

- **The concentrations of TDS have generally exceeded the Secondary MCL.** Exceedance of a secondary MCL does not indicate that there is a health risk. Secondary MCLs are a measure of aesthetic water quality.

- **Chloride concentrations have generally shown an increasing trend over the past eleven groundwater monitoring events.** The trend of increasing chloride concentrations may be due to the biodegradation of chlorinated ethenes. During the reductive dechlorination of these compounds, chloride is released as a byproduct of the breakdown. This increasing trend may also be due an increase in the background chloride concentrations in the recharging groundwater.

The absence of VOC detections in compliance wells during the March 2009 sampling event continues to confirm that VOCs are not migrating off the Site. VOCs have not been detected at compliance wells in any of the eleven rounds of the Long-Term Groundwater Monitoring Program.

3.4 GROUNDWATER LEVEL MEASUREMENTS

Surface and groundwater elevations were measured prior to groundwater sample collection on March 10, 2009. The measured water levels and elevations are summarized in Table 1.

3.4.1 Upper Aquifer - Glacial Outwash

A plot of the water table for the upper glacial outwash aquifer is presented in Figure 5. The approximate northern boundary of the glacial aquifer is within the southwest portion of the landfill. The direction of groundwater flow in the glacial aquifer is to the south-southwest. Groundwater flow and the relationship of surface water elevations to groundwater elevations are consistent with the groundwater flows defined in previous monitoring reports.

3.4.2 Lower Aquifer - Bedrock

The potentiometric surface for the lower aquifer is presented in Figure 6. The direction of groundwater flow is to the southwest toward the West Branch of the DuPage River. The flow direction is consistent with the groundwater flow identified in previous monitoring reports.

4.0 SUMMARY

Water level measurements collected in March 2009 indicate that the groundwater flow regime is similar to that shown by historical data. Groundwater in the upper aquifer near the landfill flows to the south and southwest towards the West Branch of the DuPage River. Groundwater flow in the lower aquifer is to the southwest, also toward the West Branch of the DuPage River.

Seven upper aquifer wells and four lower aquifer wells were sampled in March 2009. The results of laboratory analysis indicated that no VOCs were detected in the samples collected from the monitoring wells. These results continue to show evidence of decreasing trends in both the number of VOC analytes detected and the concentrations of VOCs. The absence of VOC detections in compliance wells during the March 2009 sampling event continues to confirm that no contamination is migrating off site in either the upper or lower aquifers. VOCs have not been detected at compliance wells in any of the eleven rounds of the Long-Term Groundwater Monitoring program.

The concentrations of TDS detected during the March 2009 groundwater monitoring event are consistent with previous sampling events, and continue to exceed U.S. EPA Secondary MCLs. Exceedance of a secondary MCL does not indicate that there is a health risk, but is rather a measure of aesthetic water quality (i.e. taste). None of the concentrations of TDS detected during the eleventh round of sampling exceeded the IEPA Class I Groundwater Standards.

5.0 CONCLUSIONS AND RECOMMENDATIONS

After the original five rounds of the Long-Term Groundwater Monitoring Program were completed in 2004, the District voluntarily extended the monitoring for an additional three sampling events. Upon completion of the three extended sampling events in 2006, the District once again voluntarily extended the monitoring to include three additional rounds of sampling to be conducted between 2007 and 2009 in the spring of each year. The purpose of these extensions was to evaluate the following four goals:

- Ensure that contaminant levels in groundwater do not increase to a level that could jeopardize either human health or the environment;
- Evaluate the effectiveness of the treatment/containment components on the landfill;
- Detect changes in the chemical composition of groundwater at and adjacent to the Site; and
- Demonstrate that natural attenuation continues to be an effective remedial strategy for impacted groundwater.

The following conclusions can be made for each of the goals based on the accumulated database of groundwater sampling results:

- The monitoring program confirms contaminant levels in groundwater are decreasing. No VOCs were detected in groundwater samples from any of the monitoring wells during the March 2009 event. During the March 2008 event, concentrations of two VOCs, cis-1,2-dichlorethene and vinyl chloride, were detected in the outwash aquifer. Cis-1,2-dichloroethene has previously been detected at very low concentrations, below regulatory limits. In addition, vinyl chloride has occasionally been detected at concentrations slightly above the regulatory limit of 2 µg/L. However, vinyl chloride was not detected in any of the samples collected in March 2009.

- No contaminants have been detected in the bedrock aquifer wells over the past eleven rounds of monitoring.

- Monitoring data at detection and compliance wells in the outwash and bedrock aquifers indicate the treatment/containment components of the landfill are effective at preventing release of contaminants to groundwater. No "breakouts" of monitored target compounds have been observed.

- The monitoring program has been able to detect chemical changes in the composition of groundwater adjacent to the Site. Concentrations of chloride are slightly increasing overall. Chloride levels and sulfate levels are, nevertheless, consistently below regulatory limits.

- The monitoring data indicates that natural attenuation has been effective in reducing contaminant concentrations in groundwater. Cis-1,2-dichloroethene was the most commonly detected compound in groundwater in previous sampling events and has been primarily detected at two monitoring wells, G118S and G127, within the outwash aquifer close to the landfill. However, this compound was not detected in samples from any of the monitoring wells during the March 2009 sampling event. Previous concentrations of this compound have not exceeded regulatory limits. The detected concentrations of vinyl chloride in samples from G118S and G127 during March 2007 and in the sample from G127 during March 2008 are believed to be the result of the breakdown of cis-1,2-dichlorethene. Vinyl chloride was not detected in samples from any of the monitoring wells during the March 2009 sampling event.

There is strong and consistent evidence that the combined remedy, which included landfill containment/treatment systems and natural attenuation in groundwater, are protective of human health and environment.

As outlined in the *Long-Term Groundwater Monitoring Report, Eighth Round* (MWH, December 2006), three rounds of groundwater monitoring were to be conducted annually between 2007 and 2009. This sampling event was the final proposed round.

MWH and the District are proposing in this report to extend the groundwater monitoring program for three additional rounds with the following modifications:

- Water levels will be collected prior to sampling activities at all the wells in the monitoring network with the exception of G133S and G133D. These wells will be proposed for abandonment as part of the archery range improvement project. VOCs have not been detected at either of these wells during long-term monitoring. In addition, surface water elevations will continue to be measured at the seven designated locations by a licensed surveyor.

- Two Glacial Till Outwash Aquifer Detection wells (G129 and G130) and one Glacial Till Outwash Aquifer Compliance well (G122) will no longer be sampled as these wells have not had detections of VOCs during the Long-Term Groundwater Monitoring Program. Samples will only be collected from four monitoring wells designated as Glacial Till Outwash Aquifer Detection wells (i.e. G117, G118S, G126, and G127). These wells have historically shown detections of VOCs, primarily cis-1,2-dichloroethene. Vinyl chloride has also been sporadically detected in G118S and G127.

- Three bedrock wells (G128D, G133D, and G140D) will no longer be sampled. VOCs have not been detected at any of these wells during the long-Term Groundwater Monitoring Program.

- Samples from monitoring wells will be analyzed for VOCs only. Previous sampling events have indicated that monitored natural attenuation (MNA) is occurring at the Blackwell Site. Therefore, it is no longer necessary to monitor for these parameters. Detections of phenol, chloride, and sulfate have not exceeded EPA MCLs or IEPA Class I Groundwater Standards during long-term monitoring. In addition, TDS detections have not exceeded IEPA Class I Groundwater Standards during the monitoring program.

- Sampling will be conducted in 2010, 2011, and 2012 in the spring when infiltration potential is highest for the landfill and so a release of a compound would be most likely. Further modifications to the Long-Term Groundwater Monitoring Program may be recommended based on the results of these sampling events.

6.0 REFERENCES

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TABLES

Table 1
Summary of Groundwater Level Measurements
Long-Term Groundwater Monitoring Program - Round 11
Blackwell Landfill, DuPage County, Illinois

Deep Monitoring Wells (Bedrock)

Well Designation	Depth to Water (feet)	TOIC Elevation (feet)	Groundwater Elevation (feet)	Notes
G128D	9.69	705.51	695.82	Detection Well
G133D	12.45	708.14	695.69	Compliance Well
G138	13.05	708.79	695.74	Compliance Well
G140D	9.83	705.81	695.98	Detection Well

Shallow Monitoring Wells (Glacial Outwash)

Well Designation	Depth to Water (feet)	TOIC Elevation (feet)	Groundwater Elevation (feet)	Notes
G117	8.53	705.79	697.26	Detection Well
G118S	11.79	711.56	699.77	Detection Well
G122	10.63	706.62	695.99	Compliance Well
G126	8.30	704.61	696.31	Detection Well
G127	9.79	706.72	696.93	Detection Well
G129	4.82	702.86	698.04	Detection Well
G130	10.85	710.40	699.55	Detection Well
G147	9.50	704.86	695.36	Compliance Well

Water Level Wells

Well Designation	Depth to Water (feet)	TOIC Elevation (feet)	Groundwater Elevation (feet)	Notes
P2	4.63	699.32	694.69	Glacial Outwash Aquifer Well
G107S	11.42	708.60	697.18	Glacial Outwash Aquifer Well
G114	11.60	709.53	697.93	Glacial Outwash Aquifer Well
G121	7.98	703.71	695.73	Glacial Outwash Aquifer Well
G123	9.25	706.21	696.96	Glacial Outwash Aquifer Well
G133S	12.24	708.13	695.89	Glacial Outwash Aquifer Well
G142	12.38	709.25	696.87	Glacial Outwash Aquifer Well
G143	9.53	706.56	697.03	Glacial Outwash Aquifer Well
G144	3.20	701.88	698.68	Glacial Outwash Aquifer Well
G132D	23.34	725.99	702.65	Bedrock Well
G134	24.54	727.20	702.66	Bedrock Well
G135	23.31	721.07	697.76	Bedrock Well
G137	6.43	702.08	695.65	Bedrock Well
G139	6.35	702.22	695.87	Bedrock Well

Surface Water

Measurement Location	Surface Water Elevation (feet)
Silver Lake	709.10
Pool West of Silver Lake	706.06
Sand Pond	695.74
Pine Lake	695.39
Spring Brook - No. 2	702.10
Spring Brook - No. 3	696.86
DuPage River	692.76

Notes:

Surface water elevations measured by Area Survey Company on March 10, 2009.

Groundwater levels measured by MWH on March 10, 2009.

All depth and elevation measurements in units of feet.

TOIC = Top of inner casing

Table 2
Summary of Stabilized Field Parameters
Long-Term Groundwater Monitoring Program - Round 11
Blackwell Landfill, DuPage County, Illinois

Deep Monitoring Wells (Bedrock)

Well Number	Type of Well	pH	Specific Conductivity (S/m)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Oxidation - Reduction Potential (mV)
G128D	Detection	7.16	0.09	65	0.00	11.5	-105
G133D	Compliance	11.37	0.09	1.90	6.62	8.7	-48
G138	Compliance	7.41	0.098	0.99	1.87	8.4	75
G140D	Detection	7.28	0.12	1.03	0.00	10.2	17

Shallow Monitoring Wells (Glacial Outwash)

Well Number	Type of Well	pH	Specific Conductivity (S/m)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Oxidation - Reduction Potential (mV)
G117	Detection	7.77	0.078	60	3.19	11.2	-50
G118S	Detection	6.83	0.14	0	0.39	6.1	106
G122	Compliance	6.98	0.11	1.00	0.00	8.6	88
G126	Detection	7.24	0.15	0.99	0.00	9.4	-50
G127	Detection	6.86	0.12	2.0	2.24	7.2	44
G129	Detection	7.21	0.10	1.72	0.00	7.0	-49
G130	Detection	7.11	0.09	0	11.36	6.3	110

Notes:

°C - Degrees Celsius
mg/L - Milligrams per liter
S/m - Siemens per meter
NTU - Nephelometric turbidity units
mV - Millivolts

Table 3
Validated Analytical Results
Long-Term Groundwater Monitoring Program - Round 11
Blackwell Landfill, DuPage County, Illinois

Sample Name / Sample Date / Parameter	EPA MCLs	IEPA Class I Standards	Units	BW-GW-G117-19 03/10/09 Conc	LQ/DVQ	PQL	BW-GW-G117-919 03/10/09 Conc	LQ/DVQ	PQL	BW-GW-G118S-19 03/11/09 Conc	LQ/DVQ	PQL	BW-GW-G122-19 03/11/09 Conc	LQ/DVQ	PQL	BW-GW-G126-19 03/11/09 Conc	LQ/DVQ	PQL	BW-GW-G127-19 03/12/09 Conc	LQ/DVQ	PQL	BW-GW-G127-919 03/12/09 Conc	LQ/DVQ	PQL
VOC																								
Acetone		700*	ug/L		U/	100		U/	100		U/	100		U/	100		U/	100		U/	100		U/	100
Benzene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Bromodichloromethane	100/80 (THM)	0.02a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Bromoform	100/80 (THM)	0.2a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Bromomethane (Methyl bromide)		9.8*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
2-Butanone (MEK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Carbon disulfide		700*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Carbon tetrachloride	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Chlorobenzene (Monochlorobenzene)	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Chlorodibromomethane	100/80 (THM)	140*	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Chloroethane			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Chloroform	100/80 (THM)	0.02a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Chloromethane			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
1,1-Dichloroethane		700*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,2-Dichloroethane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1-Dichloroethene	7	7	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
cis-1,2-Dichloroethene	70	70	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
trans-1,2-Dichloroethene	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,2-Dichloropropane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
cis-1,3-Dichloropropene		1a (cis + trans)	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
trans-1,3-Dichloropropene			ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Ethyl benzene	700	700	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
2-Hexanone (MBK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Methyl-tert-butylether (MTBE)			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
4-Methyl-2-pentanone (MIBK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Methylene chloride	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Styrene	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,2,2-Tetrachloroethane			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Tetrachloroethene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Toluene	1000	1000	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,1-Trichloroethane	200	200	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,2-Trichloroethane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Trichloroethene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Vinyl Acetate		7000*	ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Vinyl Chloride	2	2	ug/L		U/	2.0		U/	2.0		U/	2.0		U/	2.0		U/	2.0		U/	2.0		U/	2.0
Xylene, Total			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
SVOC																								
Phenol		100	mg/L		U/	0.01		U/	0.01		U/	0.01		U/	0.01		U/	0.01		U/	0.01		U/	0.01
INORGANIC																								
Cyanide			mg/L		NA			NA			NA			NA			NA			NA			NA	
Chloride	250**	200	mg/L	16	/J	5	38	/J	5	6	/	5	47	/	5	108	/	5	20	/	5	20	/	5
Sulfate	500	400	mg/L	86	/	15	88	/	15	194	/	15	108	/	15	111	/	15	205	/	15	206	/	15
Total Dissolved Solids	500**	1200	mg/L	**569**	/	10	**515**	/	10	**830**	/	10	**655**	/	10	**715**	/	10	**759**	/	10	**765**	/	10

Table 3
Validated Analytical Results
Long-Term Groundwater Monitoring Program - Round 11
Blackwell Landfill, DuPage County, Illinois

Sample Name / Sample Date / Parameter	EPA MCLs	IEPA Class I Standards	Units	BW-GW-G128D-19 03/10/09 Conc	LQ/DVQ	PQL	BW-GW-G129-19 03/11/09 Conc	LQ/DVQ	PQL	BW-GW-G130-19 03/11/09 Conc	LQ/DVQ	PQL	BW-GW-G133D-19 03/12/09 Conc	LQ/DVQ	PQL	BW-GW-G138-19 03/12/09 Conc	LQ/DVQ	PQL	BW-GW-G140D-19 03/11/09 Conc	LQ/DVQ	PQL
VOC																					
Acetone		700*	ug/L		U/	100		U/	100		U/	100		U/	100		U/	100		U/	100
Benzene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Bromodichloromethane	100/80 (THM)	0.02a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Bromoform	100/80 (THM)	0.2a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Bromomethane (Methyl bromide)		9.8*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
2-Butanone (MEK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Carbon disulfide		700*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Carbon tetrachloride	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Chlorobenzene (Monochlorobenzene)	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Chlorodibromomethane	100/80 (THM)	140*	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Chloroethane			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Chloroform	100/80 (THM)	0.02a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Chloromethane			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
1,1-Dichloroethane		700*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,2-Dichloroethane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1-Dichloroethene	7	7	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
cis-1,2-Dichloroethene	70	70	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
trans-1,2-Dichloroethene	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,2-Dichloropropane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
cis-1,3-Dichloropropene		1a (cis + trans)	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
trans-1,3-Dichloropropene			ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Ethyl benzene	700	700	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
2-Hexanone (MBK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Methyl-tert-butylether (MTBE)			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
4-Methyl-2-pentanone (MIBK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Methylene chloride	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Styrene	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,2,2-Tetrachloroethane			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Tetrachloroethene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Toluene	1000	1000	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,1-Trichloroethane	200	200	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,2-Trichloroethane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Trichloroethene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Vinyl Acetate		7000*	ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Vinyl Chloride	2	2	ug/L		U/	2.0		U/	2.0		U/	2.0		U/	2.0		U/	2.0		U/	2.0
Xylene, Total			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0		U/	5.0
SVOC																					
Phenol		100	mg/L		U/	0.01		U/	0.01		U/	0.01		U/	0.01		U/	0.01		U/	0.01
INORGANIC																					
Cyanide			mg/L		NA			NA			NA			NA			NA			NA	
Chloride	250**	200	mg/L	60	/	5	56	/	5	12	/	5	142	/	5	59	/	5	103	/	5
Sulfate	500	400	mg/L	95	/	15	84	/	15	86	/	15	80	/	15	82	/	15	131	/	15
Total Dissolved Solids	500**	1200	mg/L	**504**	/	10	**541**	/	10	**512**	/	10	438	/	10	**566**	/	10	**682**	/	10

Table 3
Validated Analytical Results
Long-Term Groundwater Monitoring Program - Round 11
Blackwell Landfill, DuPage County, Illinois

Sample Name / Sample Date / Parameter	EPA MCLs	IEPA Class I Standards	Units	BW-GW-FB01-19 03/10/09 Conc	LQ/DVQ	PQL	BW-GW-FB02-19 03/11/09 Conc	LQ/DVQ	PQL	BW-GW-TB01-19 03/10/09 Conc	LQ/DVQ	PQL	BW-GW-TB02-19 03/11/09 Conc	LQ/DVQ	PQL
VOC															
Acetone		700*	ug/L		U/	100		U/	100		U/	100		U/	100
Benzene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Bromodichloromethane	100/80 (THM)	0.02a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Bromoform	100/80 (THM)	0.2a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Bromomethane (Methyl bromide)		9.8*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
2-Butanone (MEK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Carbon disulfide		700*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Carbon tetrachloride	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Chlorobenzene (Monochlorobenzene)	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Chlorodibromomethane	100/80 (THM)	140*	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Chloroethane			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Chloroform	100/80 (THM)	0.02a	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Chloromethane			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0
1,1-Dichloroethane		700*	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,2-Dichloroethane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1-Dichloroethene	7	7	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
cis-1,2-Dichloroethene	70	70	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
trans-1,2-Dichloroethene	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,2-Dichloropropane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
cis-1,3-Dichloropropene		1a (cis + trans)	ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0
trans-1,3-Dichloropropene			ug/L		U/	1.0		U/	1.0		U/	1.0		U/	1.0
Ethyl benzene	700	700	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
2-Hexanone (MBK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Methyl-tert-butylether (MTBE)			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
4-Methyl-2-pentanone (MIBK)			ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Methylene chloride	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Styrene	100	100	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,2,2-Tetrachloroethane			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Tetrachloroethene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Toluene	1000	1000	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,1-Trichloroethane	200	200	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
1,1,2-Trichloroethane	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Trichloroethene	5	5	ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
Vinyl Acetate		7000*	ug/L		U/	10.0		U/	10.0		U/	10.0		U/	10.0
Vinyl Chloride	2	2	ug/L		U/	2.0		U/	2.0		U/	2.0		U/	2.0
Xylene, Total			ug/L		U/	5.0		U/	5.0		U/	5.0		U/	5.0
SVOC															
Phenol		100	mg/L		U/	0.01		U/	0.01		NA			NA	
INORGANIC															
Cyanide			mg/L		NA			NA			NA			NA	
Chloride	250**	200	mg/L		U/	5		U/	5		NA			NA	
Sulfate	500	400	mg/L		U/	15		U/	15		NA			NA	
Total Dissolved Solids	500**	1200	mg/L		U/	10		U/	10		NA			NA	

Notes:
Conc = concentration
LQ/DVQ = Lab Qualifiers/Data Validation Qualifiers
PQL = Practical Quantitation Limit
* not listed as standard in 620.410:
** Secondary MCLs:
a - Health Advisory Conc. equal to Acceptable Detection Limit (ADL) for carcinogens
THM - Total for all THMs cannot exceed the 80ug/L level
NA - Not Analyzed
Bold = Exceeds MCLs

Sample Label Identifiers:
FB - field blank
GW - groundwater
G117 - well identification
TB - trip blank
-19 - indicates the sampling round beginning after the completion of the Feasibility Study in 1995
-919 - duplicate sample

Qualifier Definitions:
U/ - Not detected
/J - Data validation indicates concentration is estimated

Table 4
Summary of Detections in Monitoring Wells
Long-Term Groundwater Monitoring Program - Round 11
Blackwell Landfill, DuPage County, Illinois

Parameter	EPA MCLs	IEPA Class I Standards	Units	Outwash Detection			Bedrock Detection			Outwash Compliance			Bedrock Compliance		
					Range			Range			Range			Range	
				Detections	Min	Max	Detections	Min	Max	Detections	Min	Max	Detections	Min	Max
VOC															
cis-1,2-Dichloroethene	70	70	ug/L	0 / 6	ND	ND	0 / 2	ND	ND	0 / 1	ND	ND	0 / 2	ND	ND
Vinyl Chloride	2	2	ug/L	0 / 6	ND	ND	0 / 2	ND	ND	0 / 1	ND	ND	0 / 2	ND	ND
SVOC															
Phenol		100	mg/L	0 / 6	ND	ND	0 / 2	ND	ND	0 / 1	ND	ND	0 / 2	ND	ND
INORGANIC															
Chloride	250**	200	mg/L	6 / 6	6	108	2 / 2	60	103	1 / 1	47	47	2 / 2	59	142
Sulfate	500	400	mg/L	6 / 6	84	205	2 / 2	95	131	1 / 1	108	108	2 / 2	80	82
Total Dissolved Solids	500**	1200	mg/L	6 / 6	**512**	**830**	2 / 2	**504**	**682**	1 / 1	**655**	**655**	2 / 2	438	**566**

Notes:

Bold = Exceeds MCLs

** = Secondary MCLs

ND = No Detections

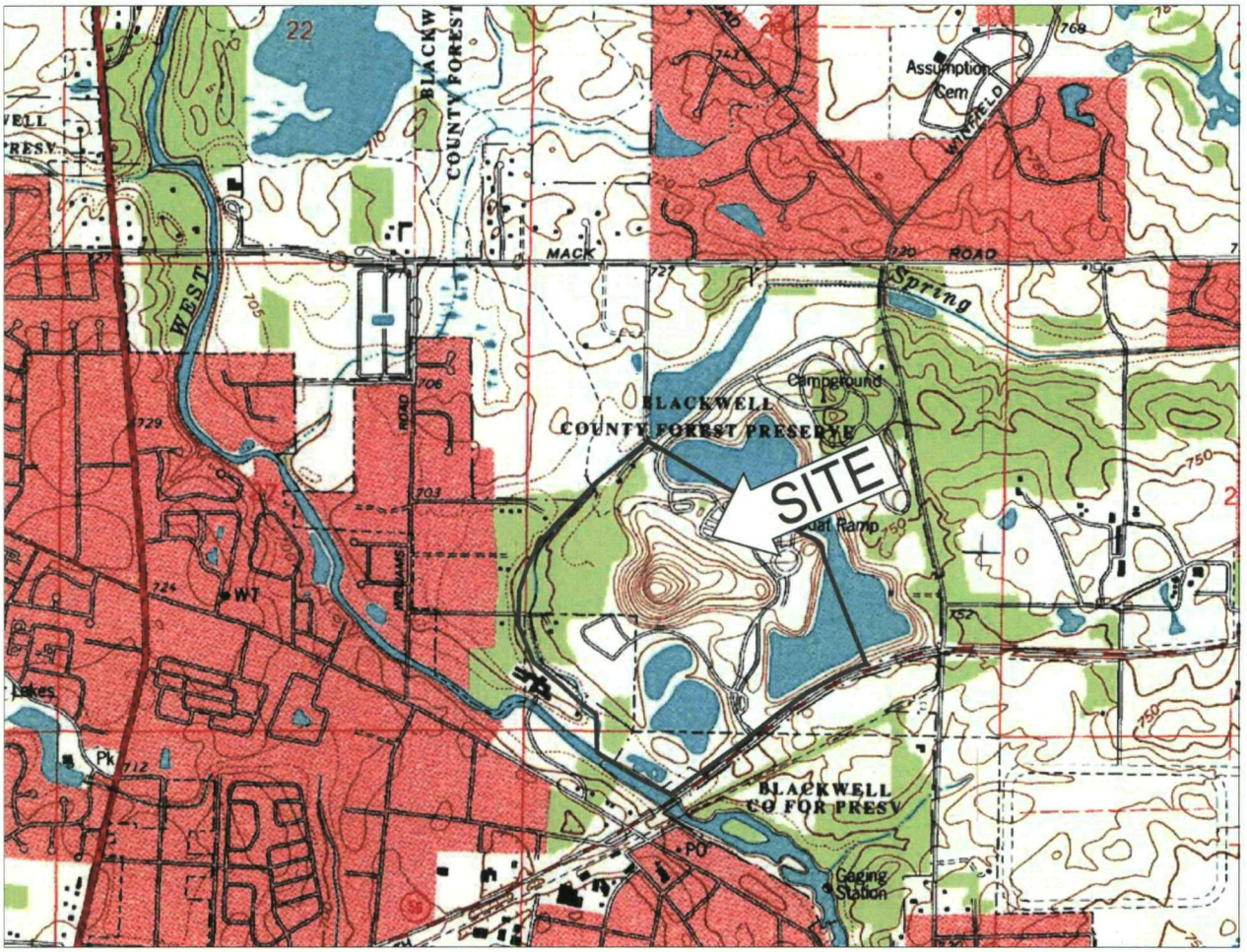
ug/L = microgram per Liter

mg/L = milligram per Liter

VOC = volatile organic compound

SVOC = semi-volatile organic compound

FIGURES



BASE MAP DEVELOPED FROM THE
NAPERVILLE, ILLINOIS 7.5 MINUTE
U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP
DATED: 1993

N

2000

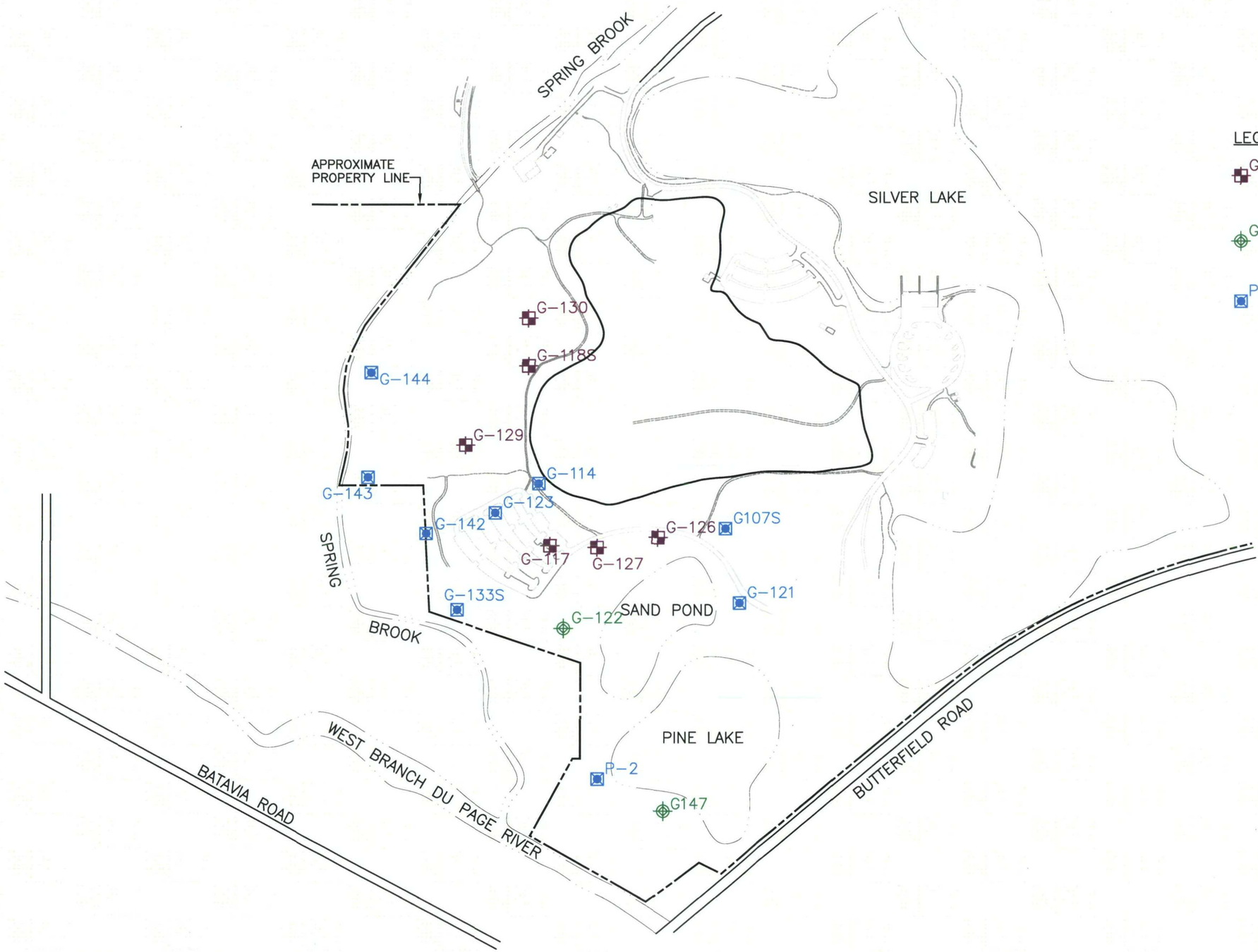
SCALE IN FEET

MWH	BLACKWELL LANDFILL NPL SITE DUPAGE COUNTY, ILLINOIS	SITE LOCATION MAP	FIGURE 1

J:\209\0045 Blackwell\Drawings\2090045_site_loc_map.dwg Jun 01, 2005 – 9:50am

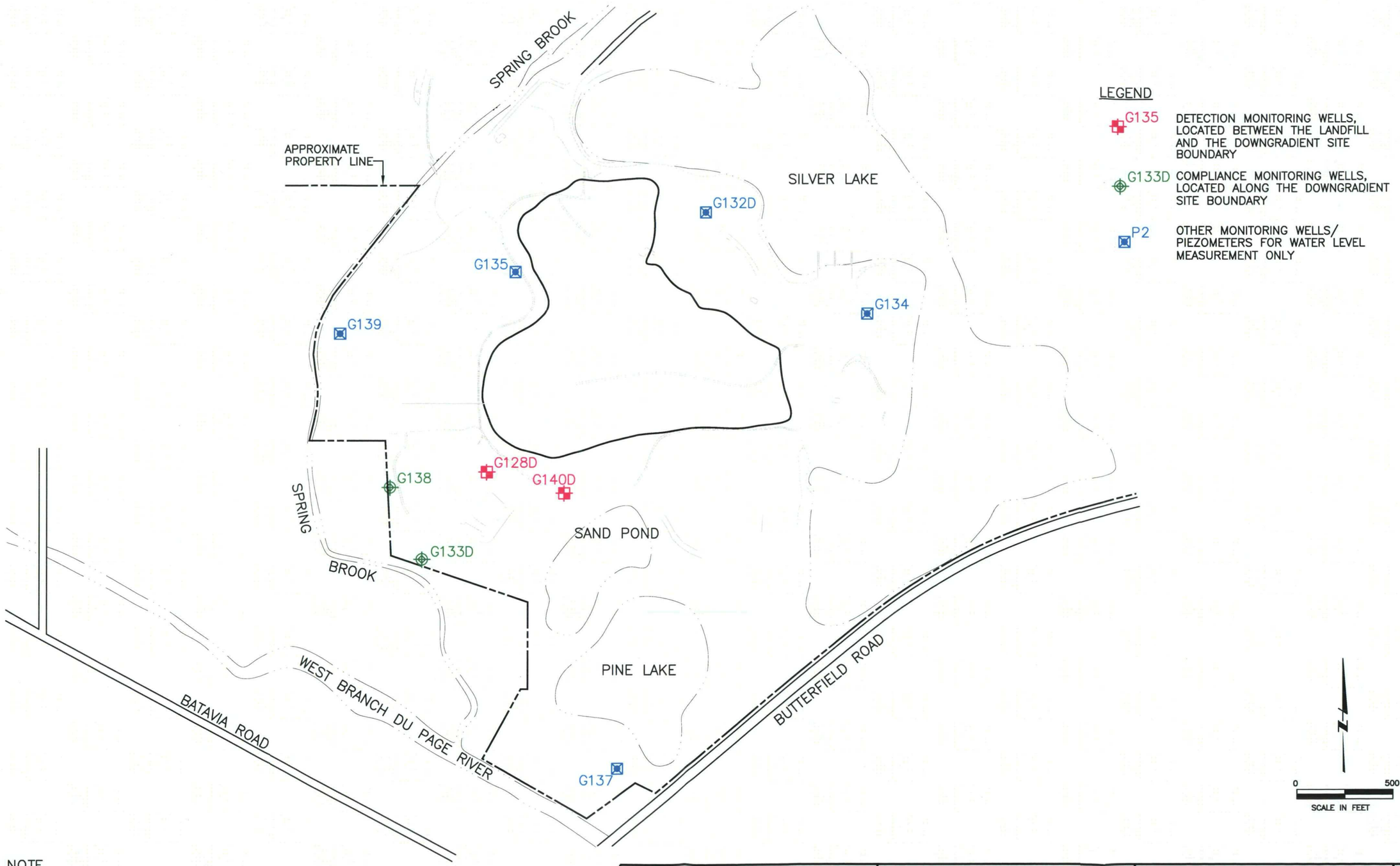
MWH	BLACKWELL LANDFILL NPL SITE DU PAGE COUNTY, ILLINOIS	SITE FEATURES MAP	FIGURE 2

J:\jobs\1252\008\mwdwgs\00801c98f.dwg May 16, 2008 – 10:16am



NOTE
BASE MAP DEVELOPED FROM WARZYN INC. DRAWING NO. 6072100-B47, "GROUNDWATER MONITORING WELL SAMPLING LOCATION MAP", DATED JULY 28, 1994.

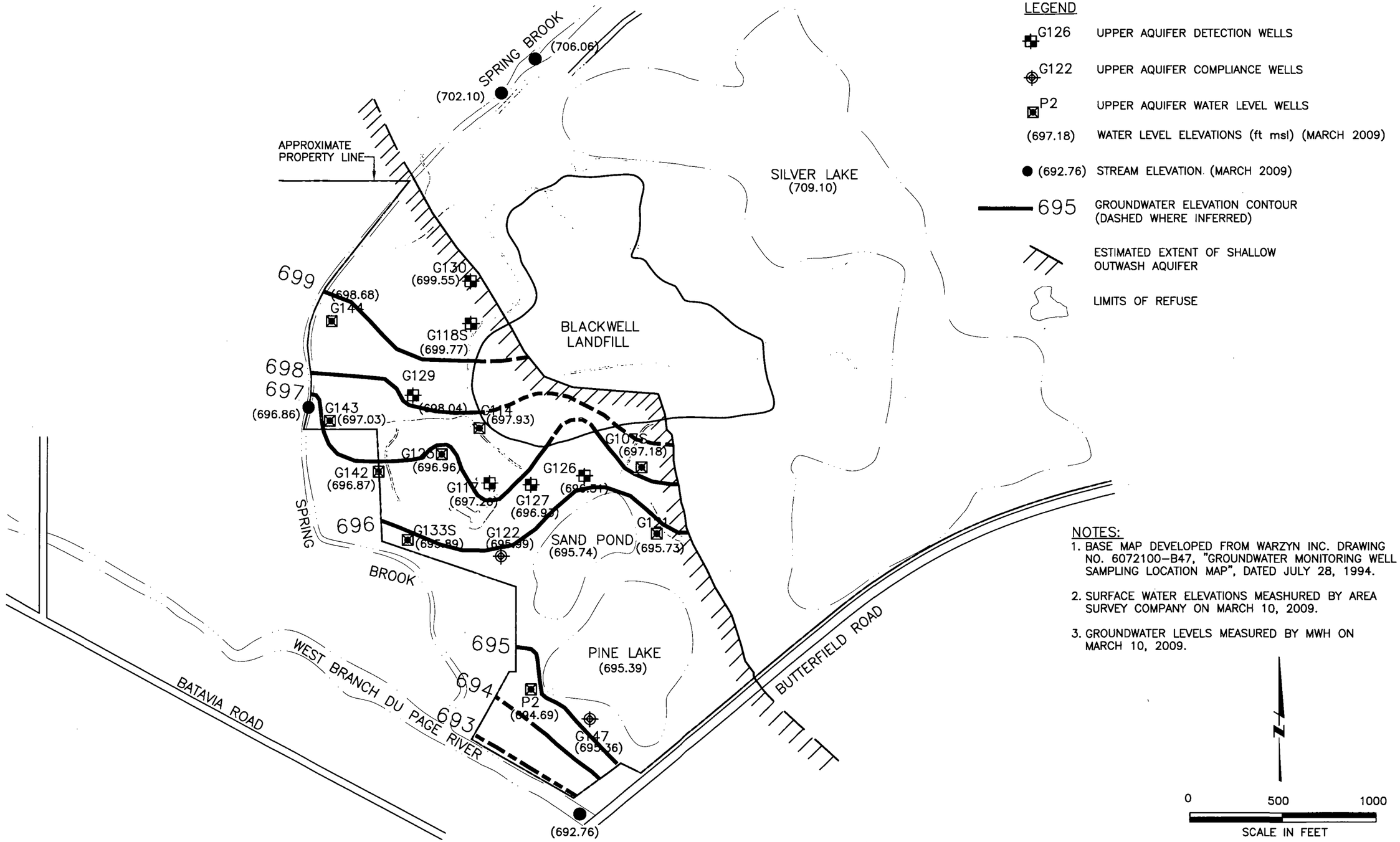
MWH	BLACKWELL LANDFILL NPL SITE DU PAGE COUNTY, ILLINOIS	UPPER AQUIFER WELL AND PIEZOMETER LOCATIONS	FIGURE 3



NOTE
BASE MAP DEVELOPED FROM WARZYN INC. DRAWING NO. 6072100-B47, "GROUNDWATER MONITORING WELL SAMPLING LOCATION MAP", DATED JULY 28, 1994.

MWH	BLACKWELL LANDFILL NPL SITE DU PAGE COUNTY, ILLINOIS	BEDROCK AQUIFER WELL LOCATIONS

FIGURE 4

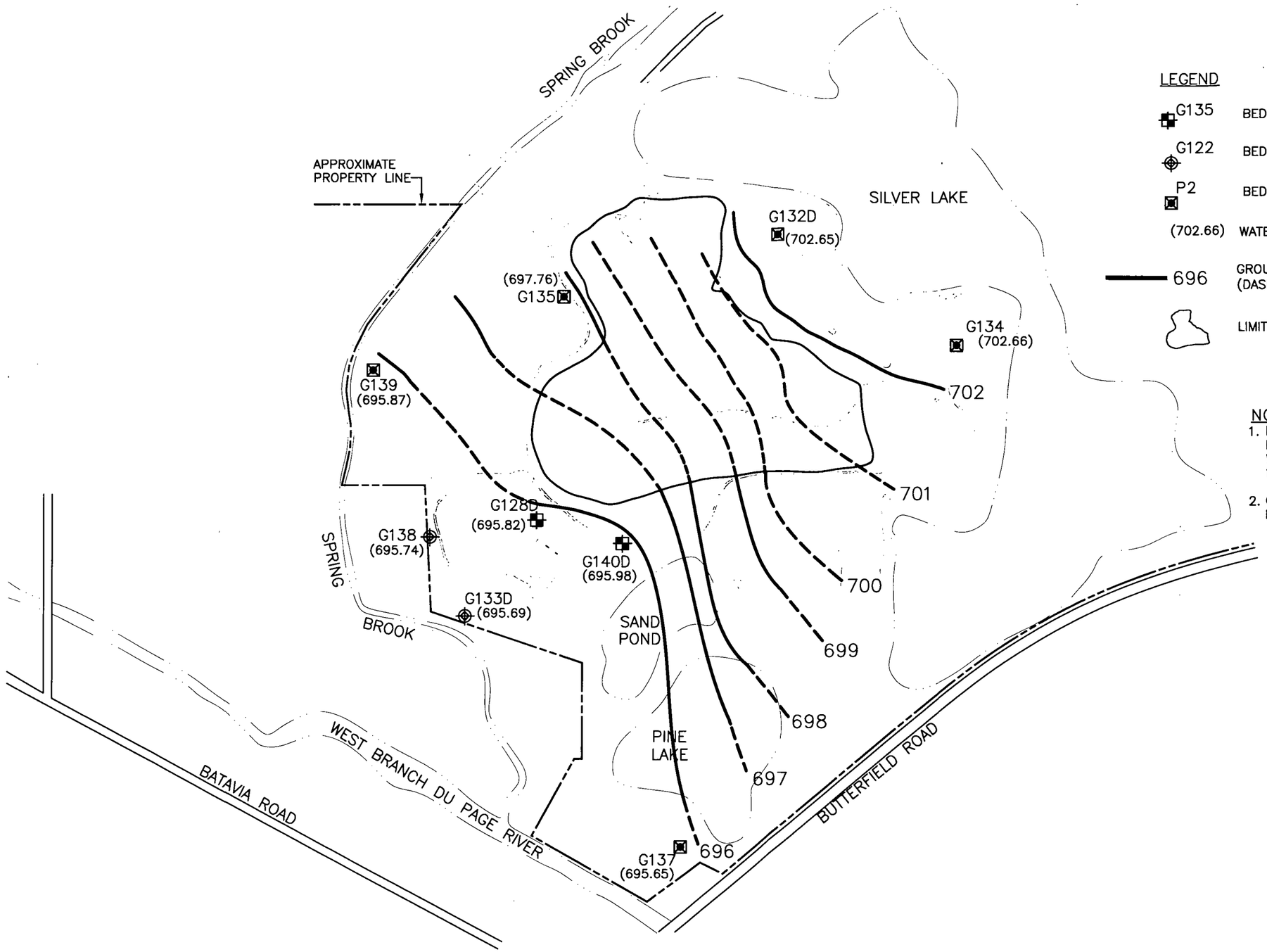


NOTES:

1. BASE MAP DEVELOPED FROM WARZYN INC. DRAWING NO. 6072100-B47, "GROUNDWATER MONITORING WELL SAMPLING LOCATION MAP", DATED JULY 28, 1994.
2. SURFACE WATER ELEVATIONS MEASHURED BY AREA SURVEY COMPANY ON MARCH 10, 2009.
3. GROUNDWATER LEVELS MEASURED BY MWH ON MARCH 10, 2009.

SCALE			FIGURE
AS SHOWN	MWH	BLACKWELL LANDFILL NPL SITE DUPAGE COUNTY, ILLINOIS	UPPER AQUIFER WATER TABLE MAP (MARCH 2009)	5

J:\jobs\405\0581 Blackwell\Drawings\March 2009 GW Report\March09_Fig5.dwg May 12, 2009 - 9:53am



NOTES:

1. BASE MAP DEVELOPED FROM WARZYN INC. DRAWING NO. 6072100-B47, "GROUNDWATER MONITORING WELL SAMPLING LOCATION MAP", DATED JULY 28, 1994.
2. GROUNDWATER LEVELS MEASURED BY MWH ON MARCH 10, 2009.

SCALE			
AS SHOWN	MWH	BLACKWELL LANDFILL NPL SITE DUPAGE COUNTY, ILLINOIS	LOWER AQUIFER POTENTIOMETRIC SURFACE MAP (MARCH 2009)

FIGURE 6

J:\jobs\405\0581 Blackwell\Drawings\March 2009 GW Report\March09_Fig6.dwg May 18, 2009 - 8:28am

APPENDIX A

LABORATORY ANALYTICAL DATA SHEETS

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

March 16, 2009

Mr. Justin Finger
MONTGOMERY WATSON HARZA
175 West Jackson Boulevard,
Suite 1900
Chicago, IL 60604

Project ID: Blackwell P.O. # 4050581.09160101
First Environmental File ID: 9-0847
Date Received: March 11, 2009

Dear Mr. Justin Finger:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 002205: effective 02/06/09 through 02/28/10.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

William Mottashed
Project Manager

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

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Case Narrative

MONTGOMERY WATSON HARZA

Project ID: **Blackwell P.O. # 4050581.09160101**

First Environmental File ID: **9-0847**

Date Received: **March 11, 2009**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis or extraction holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

First Environmental Laboratories, Inc.

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/10/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	10:45
Sample ID:	BW-GW-TB01-19	**Date Received:**	03/11/09
Sample No:	9-0847-001	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/10/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	11:00
Sample ID:	BW-GW-FB01-19	**Date Received:**	03/11/09
Sample No:	9-0847-002	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/12/09	420.4R1.0	
Chloride	< 5	5	mg/L	03/12/09	4500Cl, C	
Sulfate	< 15	15	mg/L	03/12/09	4500S04,E	
Total Dissolved Solids	< 10	10	mg/L	03/12/09	2540C	

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Analytical Report

Client: MONTGOMERY WATSON HARZA
Project ID: Blackwell P.O. # 4050581.09160101
Sample ID: BW-GW-FB01-19
Sample No: 9-0847-002

Date Collected: 03/10/09
Time Collected: 11:00
Date Received: 03/11/09
Date Reported: 03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/10/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	12:45
Sample ID:	BW-GW-G128D-19	**Date Received:**	03/11/09
Sample No:	9-0847-003	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/12/09	420.4R1.0	
Chloride	60	5	mg/L	03/12/09	4500Cl, C	
Sulfate	95	15	mg/L	03/12/09	4500S04,E	
Total Dissolved Solids	504	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/10/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	12:45
Sample ID:	BW-GW-G128D-19	**Date Received:**	03/11/09
Sample No:	9-0847-003	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/10/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	15:10
Sample ID:	BW-GW-G117-19	**Date Received:**	03/11/09
Sample No:	9-0847-004	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/12/09	420.4R1.0	
Chloride	16	5	mg/L	03/12/09	4500Cl, C	
Sulfate	86	15	mg/L	03/12/09	4500S04,E	
Total Dissolved Solids	569	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/10/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	15:10
Sample ID:	BW-GW-G117-19	**Date Received:**	03/11/09
Sample No:	9-0847-004	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/10/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	15:15
Sample ID:	BW-GW-G117-919	**Date Received:**	03/11/09
Sample No:	9-0847-005	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/12/09	420.4R1.0	
Chloride	38	5	mg/L	03/12/09	4500Cl, C	
Sulfate	88	15	mg/L	03/12/09	4500S04,E	
Total Dissolved Solids	515	10	mg/L	03/12/09	2540C	

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Analytical Report

Client: MONTGOMERY WATSON HARZA
Project ID: Blackwell P.O. # 4050581.09160101
Sample ID: BW-GW-G117-919
Sample No: 9-0847-005

Date Collected: 03/10/09
Time Collected: 15:15
Date Received: 03/11/09
Date Reported: 03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B** Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	9:00
Sample ID:	BW-GW-G130-19	**Date Received:**	03/11/09
Sample No:	9-0847-006	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/12/09	420.4R1.0	
Chloride	12	5	mg/L	03/12/09	4500Cl, C	
Sulfate	86	15	mg/L	03/12/09	4500S04,E	
Total Dissolved Solids	512	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	9:00
Sample ID:	BW-GW-G130-19	**Date Received:**	03/11/09
Sample No:	9-0847-006	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	9:55
Sample ID:	BW-GW-G118S-19	**Date Received:**	03/11/09
Sample No:	9-0847-007	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/12/09	420.4R1.0	
Chloride	6	5	mg/L	03/12/09	4500Cl, C	
Sulfate	194	15	mg/L	03/12/09	4500S04,E	
Total Dissolved Solids	830	10	mg/L	03/12/09	2540C	

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Analytical Report

Client: MONTGOMERY WATSON HARZA
Project ID: Blackwell P.O. # 4050581.09160101
Sample ID: BW-GW-G118S-19
Sample No: 9-0847-007

Date Collected: 03/11/09
Time Collected: 9:55
Date Received: 03/11/09
Date Reported: 03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B** Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	11:40
Sample ID:	BW-GW-G126-19	**Date Received:**	03/11/09
Sample No:	9-0847-008	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/12/09	420.4R1.0	
Chloride	108	5	mg/L	03/12/09	4500Cl, C	
Sulfate	111	15	mg/L	03/12/09	4500S04,E	
Total Dissolved Solids	715	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell P.O. # 4050581.09160101	**Time Collected:**	11:40
Sample ID:	BW-GW-G126-19	**Date Received:**	03/11/09
Sample No:	9-0847-008	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Company Name: MWH

Street Address: 175 W. JACKSON BLVD SUITE 1900

City: CHICAGO State: IL Zip: 60604

Phone: (312) 831-3000 Fax: (312) 831-3021 e-mail: JUSTIN.E.FINGER@MWHGLOBAL.COM

Send Report To: JUSTIN FINGER Via: Fax ☐ e-mail ☒

Sampled By: JUSTIN FINGER/ TIM CARROLL

Project I.D.: BLACKWELL

P.O. #: 4050581. 09160101

Matrix Codes: S = Soil W = Water O = Other

Date/Time Taken	Sample Description	Matrix	Analyses: VOCs	Phenol	Chloride	Sulfate	TDS				Comments	Lab I.D.
3/10/09 1045	BW-GW-TB01-19	W	X									9-0847-001
3/10/09 1100	BW-GW-FB01-19	W	X	X	X	X	X					002
3/10/09 1245	BW-GW-G128D-19	W	X	X	X	X	X					003
3/10/09 1510	BW-GW-G117-19	W	X	X	X	X	X					004
3/10/09 1515	BW-GW-G117-919	W	X	X	X	X	X					005
3/11/09 0900	BW-GW-G130-19	W	X	X	X	X	X					006
3/11/09 0955	BW-GW-G118S-19	W	X	X	X	X	X					007
3/11/09 1140	BW-GW-G126-19	W	X	X	X	X	X				MS/MSD	008

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No__ _____ºC
Received within 6 hrs of collection:_____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Containers Received Preserved: ☐ Yes ☐ No

Need to meet: IL. TACO ☐ ✓ IN. RISC ☐

Notes and Special Instructions: SAMPLES WERE NOT FILTERED IN THE FIELD

Relinquished By: [signature] Date/Time 3/11/09 1230 Received By: [signature] Date/Time 3/11/09 1230

Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 9/08

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March 16, 2009

Mr. Justin Finger
MONTGOMERY WATSON HARZA
175 West Jackson Boulevard,
Suite 1900
Chicago, IL 60604

Project ID: Blackwell 4050581.09160101
First Environmental File ID: 9-0860
Date Received: March 12, 2009

Dear Mr. Justin Finger:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 002205: effective 02/06/09 through 02/28/10.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

William Mottashed
Project Manager

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Case Narrative

MONTGOMERY WATSON HARZA

Project ID: **Blackwell 4050581.09160101**

First Environmental File ID: **9-0860**

Date Received: **March 12, 2009**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis or extraction holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

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Analytical Report

Client: MONTGOMERY WATSON HARZA
Project ID: Blackwell 4050581.09160101
Sample ID: BW-GW-TB02-19
Sample No: 9-0860-001

Date Collected: 03/11/09
Time Collected: 13:30
Date Received: 03/12/09
Date Reported: 03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B** Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	14:40
Sample ID:	BW-GW-G129-19	**Date Received:**	03/12/09
Sample No:	9-0860-002	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	84	15	mg/L	03/12/09	4500S04,E	
Chloride	56	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	541	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	14:40
Sample ID:	BW-GW-G129-19	**Date Received:**	03/12/09
Sample No:	9-0860-002	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	16:05
Sample ID:	BW-GW-G140D-19	**Date Received:**	03/12/09
Sample No:	9-0860-003	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	131	15	mg/L	03/12/09	4500S04,E	
Chloride	103	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	682	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	16:05
Sample ID:	BW-GW-G140D-19	**Date Received:**	03/12/09
Sample No:	9-0860-003	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	16:50
Sample ID:	BW-GW-G122-19	**Date Received:**	03/12/09
Sample No:	9-0860-004	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	108	15	mg/L	03/12/09	4500S04,E	
Chloride	47	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	655	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	16:50
Sample ID:	BW-GW-G122-19	**Date Received:**	03/12/09
Sample No:	9-0860-004	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/12/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	8:30
Sample ID:	BW-GW-G138-19	**Date Received:**	03/12/09
Sample No:	9-0860-005	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	82	15	mg/L	03/12/09	4500S04,E	
Chloride	59	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	566	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/12/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	8:30
Sample ID:	BW-GW-G138-19	**Date Received:**	03/12/09
Sample No:	9-0860-005	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B** Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/12/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	9:35
Sample ID:	BW-GW-G133D-19	**Date Received:**	03/12/09
Sample No:	9-0860-006	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	80	15	mg/L	03/12/09	4500S04,E	
Chloride	142	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	438	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/12/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	9:35
Sample ID:	BW-GW-G133D-19	**Date Received:**	03/12/09
Sample No:	9-0860-006	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B** Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/11/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	17:20
Sample ID:	BW-GW-FB02-19	**Date Received:**	03/12/09
Sample No:	9-0860-007	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	< 15	15	mg/L	03/12/09	4500S04,E	
Chloride	< 5	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	< 10	10	mg/L	03/12/09	2540C	

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Analytical Report

Client: MONTGOMERY WATSON HARZA
Project ID: Blackwell 4050581.09160101
Sample ID: BW-GW-FB02-19
Sample No: 9-0860-007

Date Collected: 03/11/09
Time Collected: 17:20
Date Received: 03/12/09
Date Reported: 03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B** Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/12/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	11:00
Sample ID:	BW-GW-G127-19	**Date Received:**	03/12/09
Sample No:	9-0860-008	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	205	15	mg/L	03/12/09	4500S04,E	
Chloride	20	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	759	10	mg/L	03/12/09	2540C	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/12/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	11:00
Sample ID:	BW-GW-G127-19	**Date Received:**	03/12/09
Sample No:	9-0860-008	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	MONTGOMERY WATSON HARZA	**Date Collected:**	03/12/09
Project ID:	Blackwell 4050581.09160101	**Time Collected:**	11:05
Sample ID:	BW-GW-G127-919	**Date Received:**	03/12/09
Sample No:	*9-0860-009*	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Date Analyzed	Method	Flag
Phenols	< 0.010	0.010	mg/L	03/16/09	420.4R1.0	
Sulfate	206	15	mg/L	03/12/09	4500S04,E	
Chloride	20	5	mg/L	03/16/09	4500Cl, E	
Total Dissolved Solids	765	10	mg/L	03/12/09	2540C	

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Analytical Report

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Sample No:	9-0860-009	**Date Reported:**	03/16/09

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 03/13/09				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

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Phone: 312-831-3000 Fax: 312-831-3021 e-mail: JUSTIN.E.FINGER@MWHGLOBAL.COM

Send Report To: JUSTIN FINGER Via: Fax ☐ e-mail ☒

Sampled By: J. FINGER / T. CARROLL

Project I.D.: BLACKWELL

P.O. #.: 4050581.0916 0101

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOCs	Phenol	Sulfate	Chloride	TDS				Comments	Lab I.D.
3/11/09 1330	BW-GW-TB02-19	W	X								9-0860-	001
3/11/09 1440	BW-GW-G129-19	W	X	X	X	X	X					002
3/11/09 1605	BW-GW-G140D-19	W	X	X	X	X	X					003
3/11/09 1650	BW-GW-G122-19	W	X	X	X	X	X					004
3/12/09 0830	BW-GW-G138-19	W	X	X	X	X	X					005
3/12/09 0935	BW-GW-G133D-19	W	X	X	X	X	X					006
3/11/09 1720	BW-GW-FB02-19	W	X	X	X	X	X					007
3/12/09 1100	BW-GW-G127-19	W	X	X	X	X	X					008
3/12/09 1105	BW-GW-G127-919	W	X	X	X	X	X					009

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes ✓ No.__ 1.6 °C
Received within 6 hrs of collection:____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:____°C
5035 Vials Frozen: Yes__ No__
Freezer Temperature:____°C

Containers Received Preserved: ☐ Yes ☐ No

Notes and Special Instructions: SAMPLES WERE NOT FILTERED IN FIELD

Relinquished By: [signature] Date/Time 3/12/09 1200 Received By: [signature] Date/Time 3/12/09 1200

Relinquished By:____ Date/Time____ Received By:____ Date/Time____

APPENDIX B

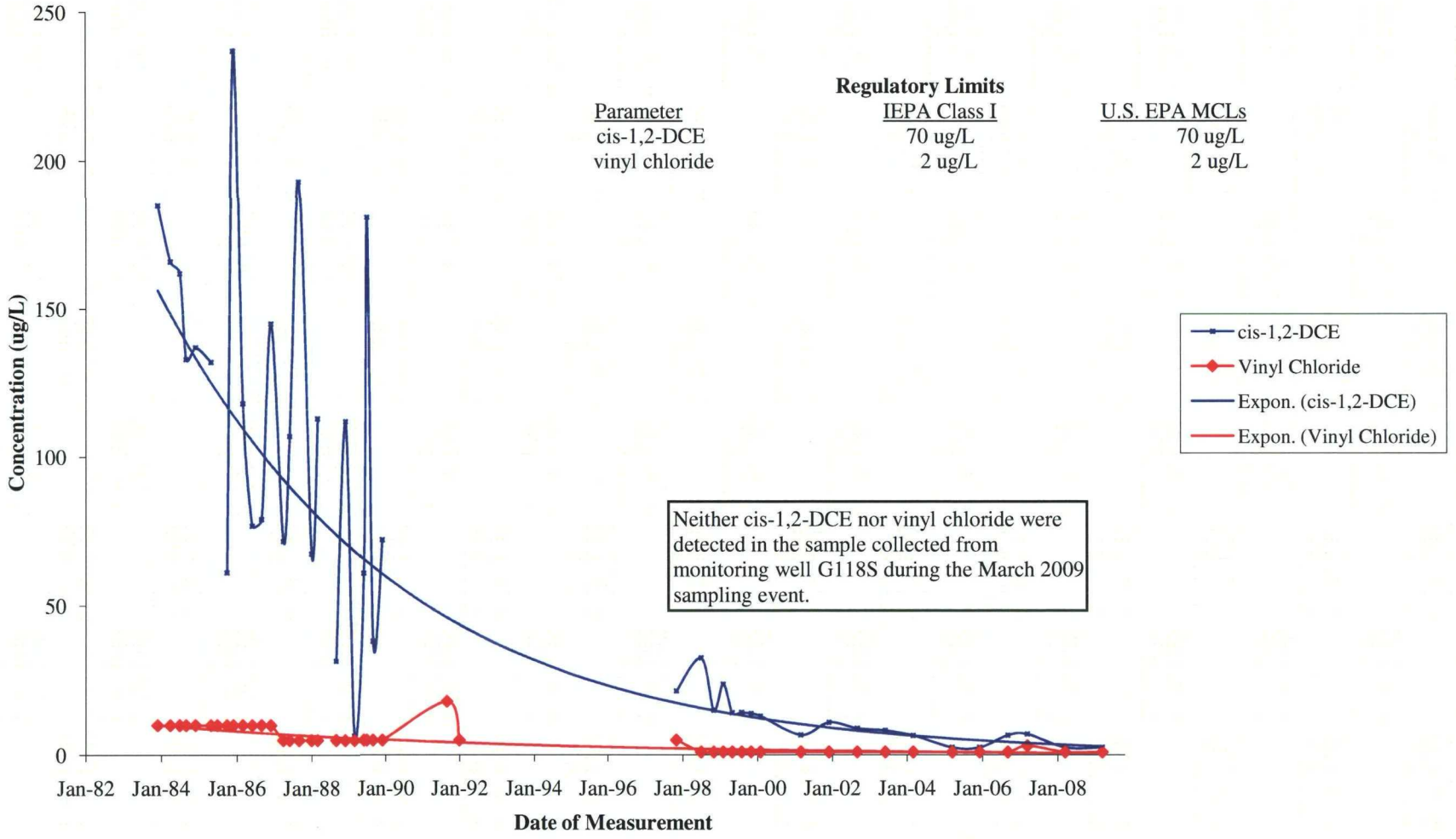
TREND LINE ANALYSIS

VOC Trend Analysis
Drawings 1 and 2
Outliers and Modified Trend Line Presentation

Data points on the Trend Analysis Drawings are considered outliers when the concentrations are considerably lower than prior or subsequent dates, and when the concentrations fell below the calculated trend line. An example of this type of outlier is a non-detect, presented as one-half the detection limit, which is preceded and followed by a detection of relatively high concentration. An evaluation of the data set that produced Drawings 1 and 2 indicates that the majority of outliers fit this category.

For presentational purposes the trend lines contained in the following Trend Analysis Drawings were produced using an exponential curve format. The resulting exponential trend lines accurately represent the decline of contaminant concentrations from December 1983 to March 2009.

Drawing 1
VOC Trend Analysis - G118S



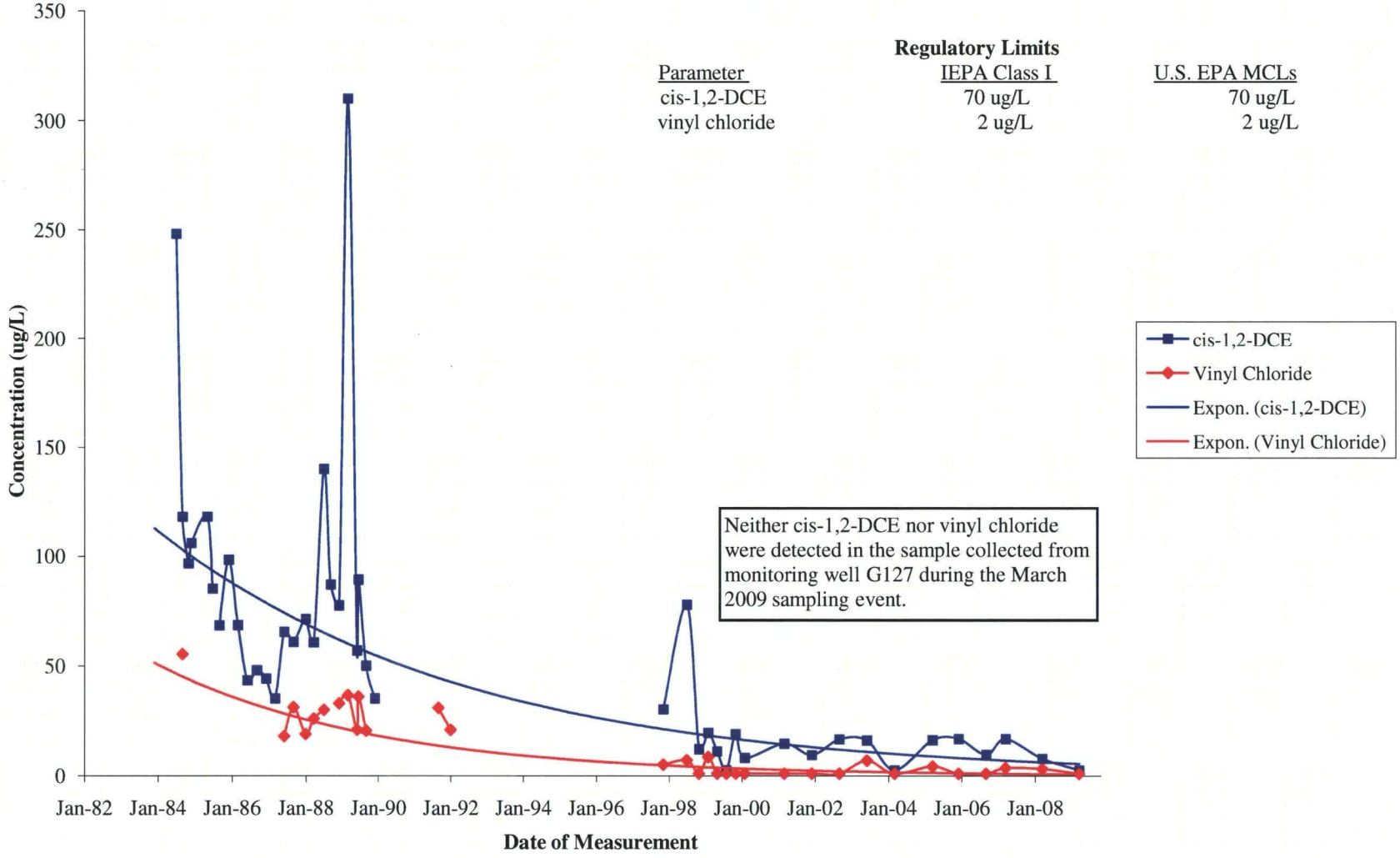
Regulatory Limits

Parameter	IEPA Class I	U.S. EPA MCLs
cis-1,2-DCE	70 ug/L	70 ug/L
vinyl chloride	2 ug/L	2 ug/L

Neither cis-1,2-DCE nor vinyl chloride were detected in the sample collected from monitoring well G118S during the March 2009 sampling event.

JEF/TPC
J:\405\0581 Blackwell\March 09 Groundwater\Appendix B\Appendix B_Drawings.xlsx\Drawing 1

Drawing 2
VOC Trend Analysis - G127



JEF/TPC
J:\405\0581 Blackwell\March 09 Groundwater\Appendix B\Appendix B_Drawings.xlsx\Drawing 2